



[4910-13-P]

**DEPARTMENT OF TRANSPORTATION**

**Federal Aviation Administration**

**14 CFR Part 39**

**[Docket No. FAA-2016-9053; Directorate Identifier 2016-NM-075-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** We propose to adopt a new airworthiness directive (AD) for all The Boeing Company Model 747-8 and 747-8F series airplanes. This proposed AD was prompted by reports of damaged vapor seals, block seals, and heat shield seals on the outboard pylons between the engine strut and aft fairing. This proposed AD would require repetitive inspections for heat damage of the vapor seals between the engine strut and aft fairing, and replacement of the seals with new seals if necessary. We are proposing this AD to detect and correct heat damage to the vapor seals between the engine strut and aft fairing. Such damage could allow flammable fluid leakage into the aft fairing, which could result in an uncontrolled fire in the engine strut.

**DATES:** We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221. It is also available on the internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9053.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9053; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Sue Lucier, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6438; fax: 425-917-6590; email: [suzanne.lucier@faa.gov](mailto:suzanne.lucier@faa.gov).

## **SUPPLEMENTARY INFORMATION:**

### **Comments Invited**

We invite you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2016-9053; Directorate Identifier 2016-NM-075-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

### **Discussion**

We have received reports of damaged vapor seals, block seals, and heat shield seals on the outboard pylons between the aft fairing and engine strut on the number 1 and number 4 engines. The reports indicate that vapor seal damage occurring on the outboard pylons at 1,468 flight cycles, fully compromised the vapor seals at 2,768 flight cycles and 3,626 flight cycles. It was determined that this condition affects only the outboard pylons because the vapor seal is located directly above the heat shield seal in these pylons. Heat from the exhaust nozzle to the vapor seal damages the seal and degrades the sealing quality. The vapor seal is a safety feature that is designed to isolate flammable hydraulic fluid from an ignition source. If the vapor seal has heat damage and there is a hydraulic leak that sprays onto the strut bulkhead, fluid could drain across the worn seal and contact heat shield surfaces below the seals. Flammable fluid leakage into the aft fairing could result in an uncontrolled fire in the engine strut.

### **Related Service Information under 1 CFR part 51**

We reviewed Boeing Alert Service Bulletin 747-54A2246, dated February 5, 2016. The service information describes procedures for repetitive inspections for heat damage of the vapor seals between the engine strut and aft fairing, and replacement of the seals with new seals. This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

### **FAA's Determination**

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

### **Proposed AD Requirements**

This proposed AD would require accomplishing the actions specified in the service information described previously, except as discussed under "Difference Between this Proposed AD and the Service Information." For information on the procedures and compliance times, see this service information at <http://www.regulations.gov> by searching for and locating Docket No. FAA-2016-9053.

### **Difference Between this Proposed AD and the Service Information**

Boeing Alert Service Bulletin 747-54A2246, dated February 5, 2016, recommends accomplishment of Part 4, "Structural Inspection and Repair for Heat Damage" (economic related), during accomplishment of Part 3, "Seal Replacement" (safety related), before installation of new seals. Part 4 is included as an economic consideration to prevent possible operational disruptions. However, this NPRM would not require those structural inspections.

### Interim Action

We consider this proposed AD interim action. The manufacturer is currently developing a modification that will address the unsafe condition identified in this proposed AD. Once this modification is developed, approved, and available, we might consider additional rulemaking.

### Costs of Compliance

We estimate that this proposed AD affects 10 airplanes of U.S. registry. We estimate the following costs to comply with this proposed AD:

#### Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Vapor seal inspections	4 work-hours X \$85 per hour = \$340 per inspection cycle	\$0	\$340 per inspection cycle	\$3,400 per inspection cycle

We estimate the following costs to do any necessary seal replacement that would be required based on the results of the proposed vapor seal inspection. We have no way of determining the number of aircraft that might need these seal replacements.

#### On-condition costs

Action	Labor cost	Parts cost	Cost per product
Seal replacement	132 work-hours X \$85 per hour = \$11,220	\$0	\$11,220

According to the manufacturer, some of the costs of this proposed AD may be covered under warranty, thereby reducing the cost impact on affected individuals. We do

not control warranty coverage for affected individuals. As a result, we have included all costs in our cost estimate.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

### **Regulatory Findings**

We determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Is not a "significant rule" under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and

(4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

**List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

**The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

**PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

**§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**The Boeing Company:** Docket No. FAA-2016-9053; Directorate Identifier 2016-NM-075-AD.

**(a) Comments Due Date**

We must receive comments by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all The Boeing Company Model 747-8 and 747-8F series airplanes, certificated in any category.

**(d) Subject**

Air Transport Association (ATA) of America Code 54 Nacelles/pylons.

**(e) Unsafe Condition**

This AD was prompted by reports of damaged vapor seals, block seals, and heat shield seals on the outboard pylons between the engine strut and aft fairing. We are issuing this AD to detect and correct heat damage to the vapor seals between the engine strut and aft fairing. Such damage could allow flammable fluid leakage into the aft fairing, which could result in an uncontrolled fire in the engine strut.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Repetitive Inspections**

At the later of the times specified in paragraphs (g)(1) and (g)(2) of this AD: Do a detailed inspection for heat damage of the vapor seals on the outboard pylons between the strut and aft fairing of the numbers 1 and 4 engines, in accordance with Part 2 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2246, dated February 5, 2016. Repeat the inspection thereafter at intervals not to exceed 1,200 flight cycles.

(i) Before the accumulation of 1,800 total flight cycles, or within 1,800 flight cycles after the most recent vapor seal, block seal, and heat shield seal replacement, whichever is later.

(ii) Within 6 months after the effective date of this AD.

**(h) Replacement**

If during any inspection required by paragraph (g) of this AD any heat damage of any vapor seal is found: Before further flight, replace the vapor seal, heat shield seal, and block seal with new seals, in accordance with Part 3 of the Accomplishment Instructions of Boeing Alert Service Bulletin 747-54A2246, dated February 5, 2016. Repeat the inspection required by paragraph (g) of this AD within 1,800 flight cycles after doing the replacement, and thereafter at intervals not to exceed 1,200 flight cycles.



**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to:

9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) For service information that contains steps that are labeled as Required for Compliance (RC), the provisions of paragraphs (i)(4)(i) and (i)(4)(ii) apply.

(i) The steps labeled as RC, including substeps under an RC step and any figures identified in an RC step, must be done to comply with the AD. An AMOC is required for any deviations to RC steps, including substeps and identified figures.

(ii) Steps not labeled as RC may be deviated from using accepted methods in accordance with the operator's maintenance or inspection program without obtaining approval of an AMOC, provided the RC steps, including substeps and identified

figures, can still be done as specified, and the airplane can be put back in an airworthy condition.

**(j) Related Information**

(1) For more information about this AD, contact Sue Lucier, Aerospace Engineer, Propulsion Branch, ANM-140S, FAA, Seattle ACO, 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: 425-917-6438; fax: 425-917-6590; email: [suzanne.lucier@faa.gov](mailto:suzanne.lucier@faa.gov).

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P.O. Box 3707, MC 2H-65, Seattle, WA 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, WA. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on August 19, 2016.

Dorr M. Anderson,  
Acting Manager,  
Transport Airplane Directorate,  
Aircraft Certification Service.

[FR Doc. 2016-20667 Filed: 8/29/2016 8:45 am; Publication Date: 8/30/2016]